STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

B - 3 7 0 1 TCP-1

PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING & DELINEATION

SWAIN COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C.,
DATED JANUARY 2002 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE
CONSIDERED A PART OF THESE PLANS:

STD. NO.	<u>TITLE</u>
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES, TYPE III
1150.01	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER (NORTH CAROLINA'S NCHRP 230)
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS & PAVEMENT MARKING SCHEDULES
TCP-2	GENERAL NOTES & PHASING
TCP-3	PHASE 1
TCP-4	PHASE 2
TCP-5	PHASE 3
TCP-6	ADVANCE WORK ZONE SIGNS DETAIL

[LEGEND]

GENERAL

DIRECTION OF TRAFFIC FLOW

NORTH ARROW

PROPOSED PVMT. ----- EXIST. PVMT.

WORK AREA

REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

T TYPE I BARRICADE

TYPE III BARRICADE

▲ CONE

■ DRUM

FLASHING ARROW PANEL (TYPE C)

TYPE 'B' WARNING LIGHT

— STATIONARY SIGN

PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

WARNING FLAGS

---- CRASH CUSHION

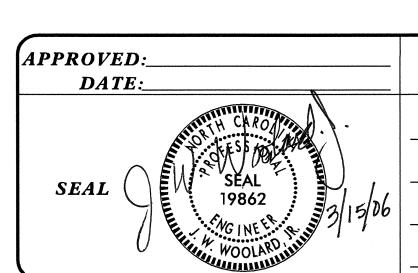
CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

POLICE

■ FLAGGER

		PAVEMENT MARKING SCHEDULE					
SYMBOL	DESCRIPTION		PAY ITEM QUA BREAKDOV		Y 	TOTAL QUA	NTITY
		FINAL PAVEMENT MARKINGS					
PA	WHITE EDGELINE	PAINT (4")	4000	LF			
PI	YELLOW DOUBLE CENTER		4000	LF	TOTAL	8000	LF
		TEMPORARY PAVEMENT MARKINGS					
		PAINT (4")					
PA PI	WHITE EDGELINE YELLOW DOUBLE CENTER		6800 6800	LF LF	TOTAL	13600	LF
		MARKERS					
		TEMPORARY RAISED PAVEMENT MARKER	RS				
МН	YELLOW & YELLOW		20	EA			



KEN BROADWELL

20 EA

PLAN	PREPARED	BY: N.	C.D.O.T.	WORK	ZONE	TRAFFIC	CONTROL	UNIT
J. STUAF	RT BOURNE P.E.	70 D 4				7 TT TT TT	C	

G. L. GETTIER, P.E.

TRAFFIC CONTROL ENGINEER

JAY WOOLARD, P.E.

TRAFFIC CONTROL PROJECT DESIGN EN

OLARD, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER

TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

B) DO NOT STOP TRAFFIC FOR MORE THAN 30 MINUTES AS FOLLOWS:

OPERATION

OR REMOVAL OF DEVICES.

ROAD NAME

1. AS REQUIRED

SR 1309

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR OTHERWISE DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- G) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
- H) DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS A DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 inches ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 inches ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

J) DO NOT EXCEED A DIFFERENCE OF 1.5 inches IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF ONCE EVERY MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

M) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 100 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER. AT NO COST TO THE DEPARTMENT.

- N) STATE FORCES WILL BE RESPONSIBLE FOR PERMANENT SIGNING.
- O) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- P) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) 500 FT IN ADVANCE OF THE UNEVEN AREA.
- Q) INSTALL BLACK ON ORANGE "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA.

TRAFFIC CONTROL DEVICES

- R) WHEN USING ROADWAY STANDARD NO. 1101.02, DRUMS MAY BE USED IN LIEU OF CONES ON SR 1309.
- S) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.
- T) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW FOR INGRESS OR EGRESS.

PAVEMENT MARKINGS AND MARKERS

U) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
1. SR 1309	PAINT	NONE

V) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

	ROAD NAME	MARKING	MARKER
	1. SR 1309	PAINT	TEMPORARY RAISED
1)	PLACE AT LEAST TWO APPL FINAL WEARING SURFACE O		

- APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.
- X) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Y) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- Z) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.
- AA) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAYS TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION, AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 500 FT AND 1000 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG U

PROJ. REFERENCE NO.	SHEET NO.
B-3701	TCP-2
	107-2

PHASING

PHASE 1

- STEP 1: INSTALL ADVANCE WORK ZONE SIGNS AS SHOWN ON SHEET TCP-6.
- STEP 2: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, CONSTRUCT THE TEMPORARY DETOUR AND TIE-INS FROM STA. 18+55 +/- -L- TO STA. 23+00 +/- -L- INCLUDING TEMPORARY PAVEMENT. CONSTRUCT THE PORTION OF THE PROPOSED -L- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. WEDGE EXISTING SR 1309 AS NECESSARY TO MAINTAIN TRAFFIC IN THE EXISTING PATTERN. (SEE SHEET TCP-3)
- STEP 3: AWAY FROM TRAFFIC BEGIN CONSTRUCTING -DR- AS SHOWN ON SHEET TCP-3.
- STEP 4: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, PLACE PAVEMENT MARKINGS (PAINT) AND PAVEMENT MARKERS (TEMPORARY RAISED) ON THE TEMPORARY DETOUR AS SHOWN ON SHEET TCP-4 AND SHIFT TRAFFIC ONTO IT.

PHASE 2

STEP 1: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, CONSTRUCT TEMPORARY PAVEMENT FROM STA. 21+88 +/- -L- TO STA. 24+20 +/- -L- AS SHOWN ON SHEET TCP-3.

INSTALL PCB FROM STA. 21+00 +/- -L- TO STA. 24+20 +/- -L- AS SHOWN ON SHEET TCP-4.

- STEP 2: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1 AND TEMPORARY ROAD CLOSURES (30 MIN. MAX) PER RSD 1101.03, SHEET 8, BEGIN CONSTRUCTION OF -L- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STA. 13+00 +/- -L- TO STA. 21+00 +/- -L-, INCLUDING THE NEW STRUCTURE.
- STEP 3: INSTALL TEMPORARY SHORING AS SHOWN ON SHEET TCP-4.

CONSTRUCT RETAINING WALL AS SHOWN IN THE CONSTRUCTION PLANS FROM STA. 21+50 +/- -L- TO STA. 23+00 +/- -L-.

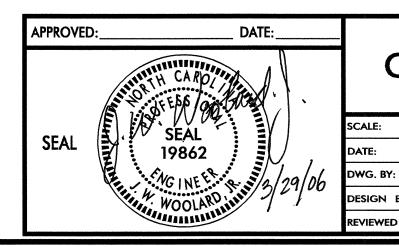
STEP 4: COMPLETE ALL CONSTRUCTION STARTED IN PHASE 2, STEPS 2 & 3.

USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, REMOVE TEMPORARY SHORING AND PCB. CONSTRUCT REMAINDER OF LEFT SIDE OF -L- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STA. 21+00 +/- -L- TO STA. 23+00 +/- -L-.

- STEP 5: INSTALL ANCHORED TYPE III GUARDRAIL ANCHOR UNITS, ANCHORED PCB AND TEMPORARY CRASH CUSHIONS AT EACH END OF THE PROPOSED STUCTURE AS SHOWN ON SHEET TCP-4.
- STEP 6: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, REMOVE CONFLICTING MARKINGS, PLACE PAVEMENT MARKINGS (PAINT) IN THE FINAL TRAFFIC PATTERN AND SHIFT TRAFFIC ONTO PROPOSED -L- IN THE FINAL TRAFFIC PATTERN. (SEE SHEET TCP-5)

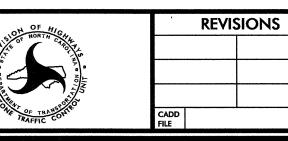
PHASE 3

- STEP 1: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, COMPLETE CONSTRUCTION OF THE RIGHT SIDE OF -L- INCLUDING TYING IN -DR-, INSTALL REMAINING GUARDRAIL, AND REMOVE REMAINING PCB. (SEE SHEET TCP-5)
- STEP 2: OBLITERATE/REMOVE EXISTING ROADWAY AND EXISTING BRIDGE AS SHOWN IN THE CONSTRUCTION PLANS. (SEE SHEET TCP-5)
- STEP 3: USING LANE CLOSURES AND FLAGGING OPERATIONS PER RSD 1101.02, SHEET 1, PLACE THE FINAL LAYER OF SURFACE COURSE AND PAVEMENT MARKINGS (PAINT) FROM STA. 13+00 +/- -L- TO STA. 23+00 +/- -L-.
- STEP 4: REMOVE ALL TRAFFIC CONTROL DEVICES.

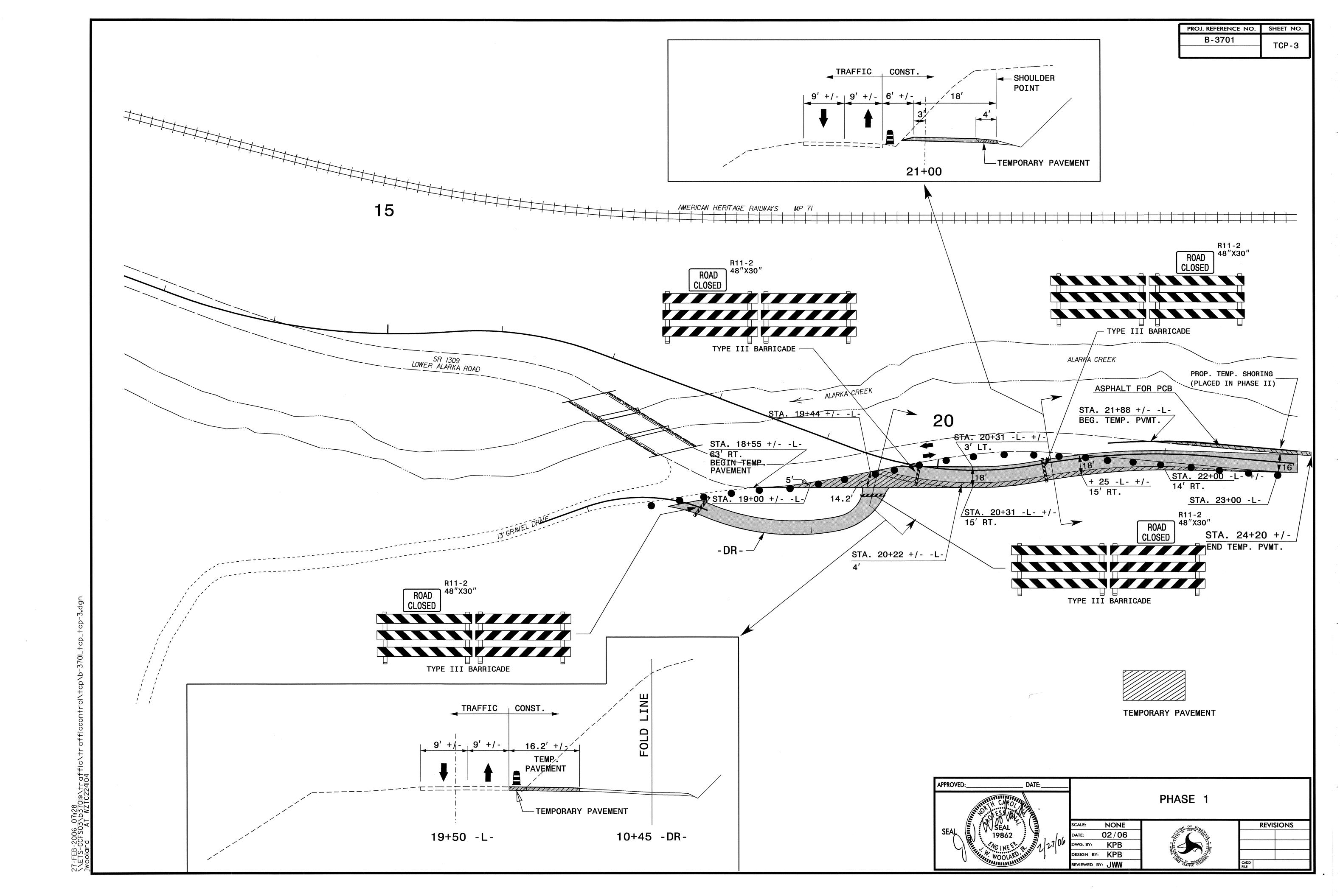


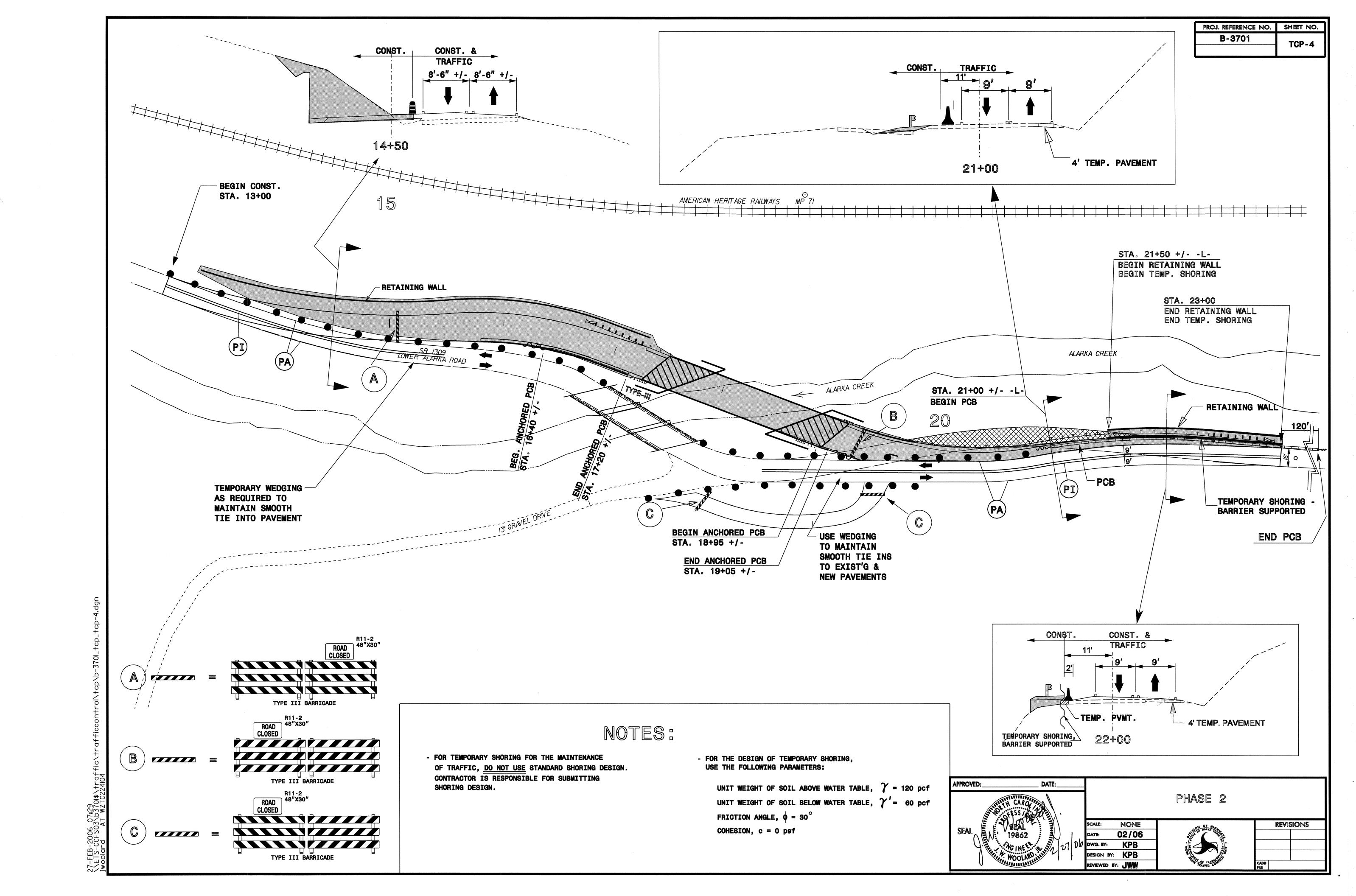
GENERAL NOTES & PHASING

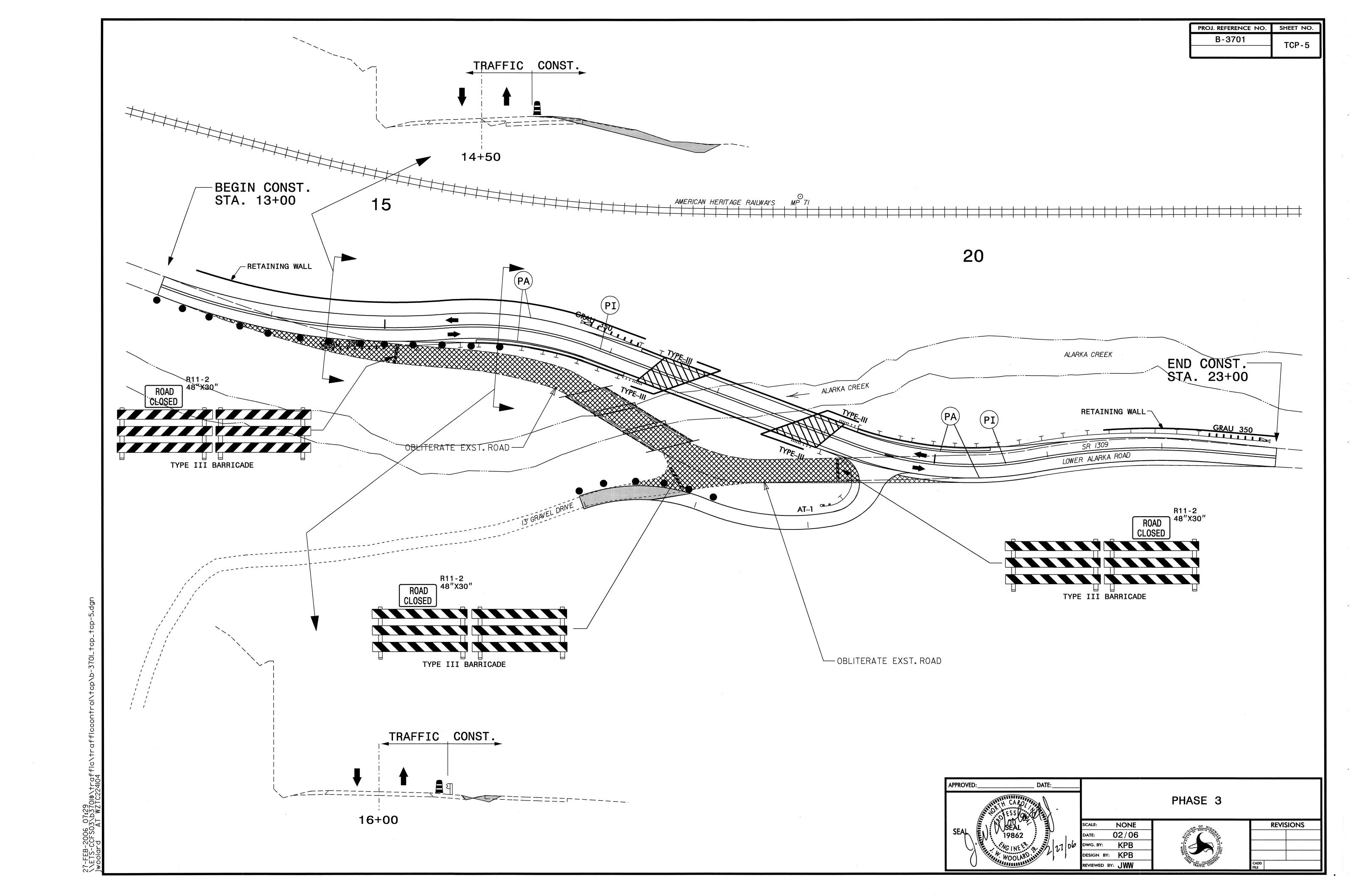
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PROJ. REFERENCE NO. SHEET NO. B-3701 TCP-6

TRANSPORTATION

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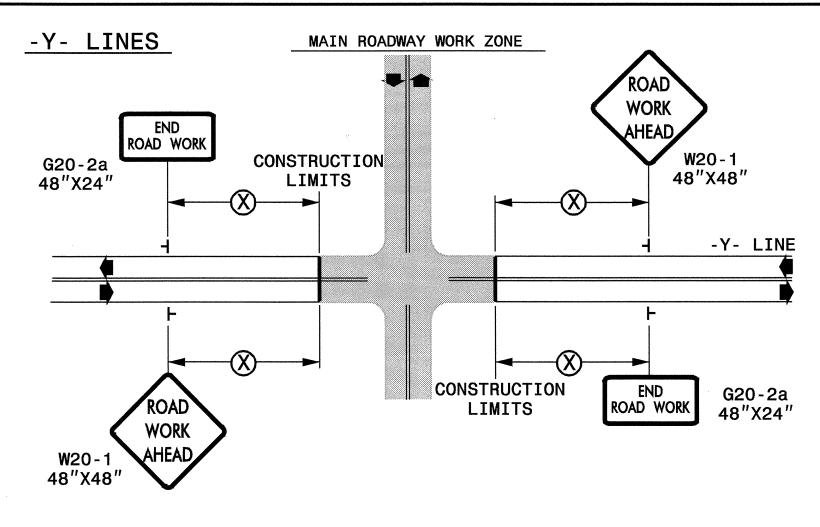
RECOMMENDED MINIMUM SIGN SPACING POSTED SPEED LIMIT (M.P.H.) ≤ 50 500' ≥ 55 1000'

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)

END

ROAD WORK G20-2a 48"X24"

TWO-WAY UNDIVIDED ** (L-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.

END

ROAD WORK G20-2a 48"x24"

- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.

HIGHWAY WORK ZONE

-<u>construction limits</u>--

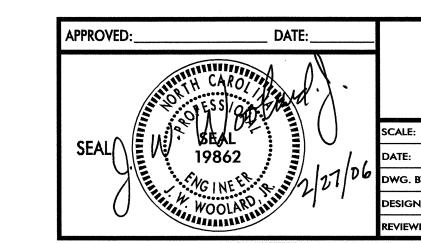
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

├ STATIONARY SIGN

■ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1



DETAIL DRAWING FOR TWO-WA	7 1
UNDIVIDED AND URBAN FREEW	AYS
ADVANCED WORK ZONE WARNING S	SIGNS

NONE	ON OF ORGINEER TO
Y :	
BY:	
ED BY:	CONTROL

REVISIONS			
7–98	10/01		
10-98	03/04		
01/01	11/04		
CADD FILE			